Welcome

to the

International Pollution Prevention Workshop

Kennedy Space Center Overview

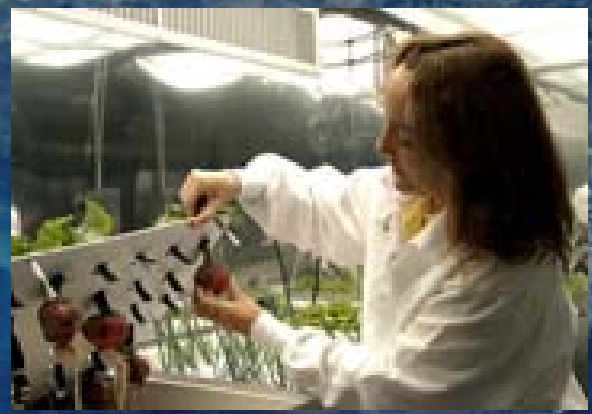
Jim Heald

Director, Spaceport Engineering&Technology

September 22, 2004

Kennedy Space Center

- 140,000 acres
- Approximately 13,200 people
- Over 1900 Civil Servants
- $1.6 Billion Budget



NASA Vision and Mission

NASA's Vision:

To improve Life here,

To extend Life to there,

To find Life beyond.

Mission:

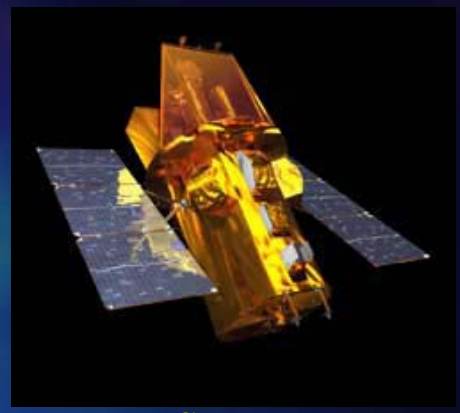
To understand and protect our home planet

To explore the Universe and search for life

To inspire the next generation of explorers

…as only NASA can.

"A Renewed Spirit of Discovery"

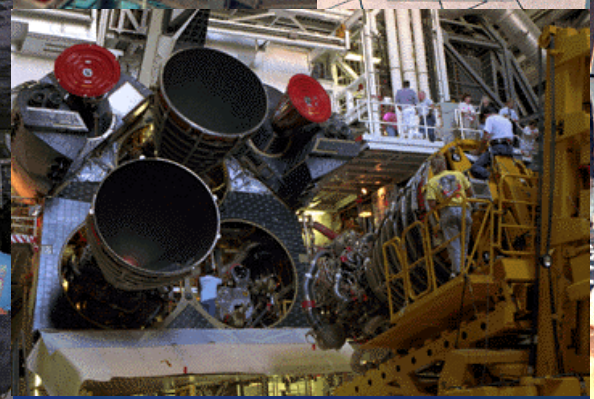


SWIFT

MESSENGER

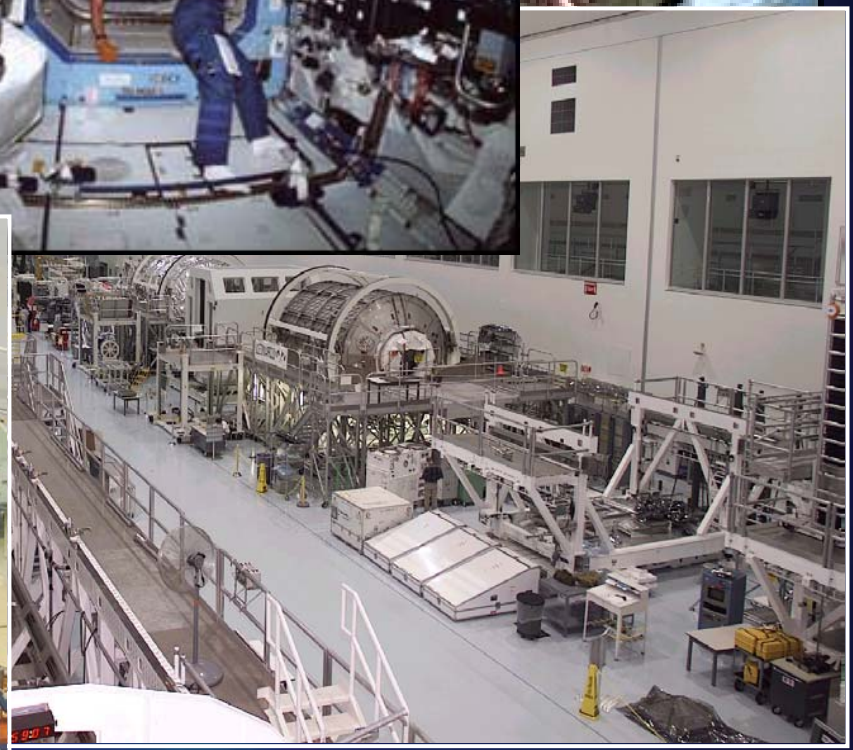
Shuttle Processing

SPACE SHUTTLE GROUND OPERATIONS



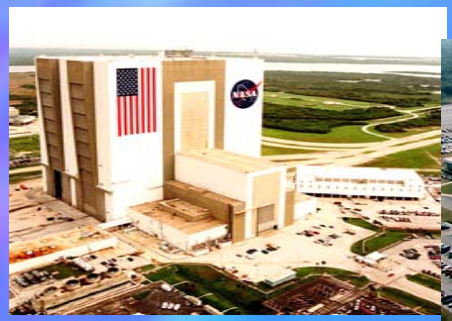
Space Shuttle Launch

International Space Station




International Space Station Today

Enabling Functions

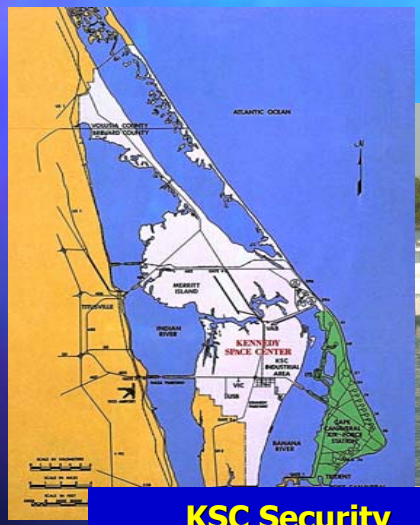


Vehicle Assembly Building

Space Station Processing Facility

Space Life Sciences Lab

Eagle Facility



KSC Security Operations

KSC Boat Patrols

K-9 Operations

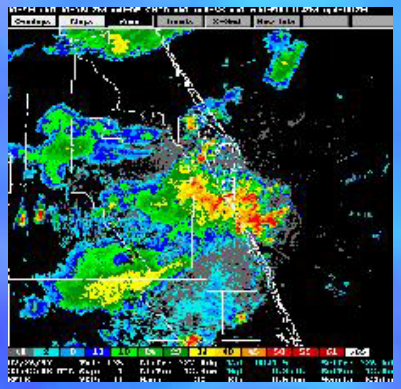
Training

SWAT

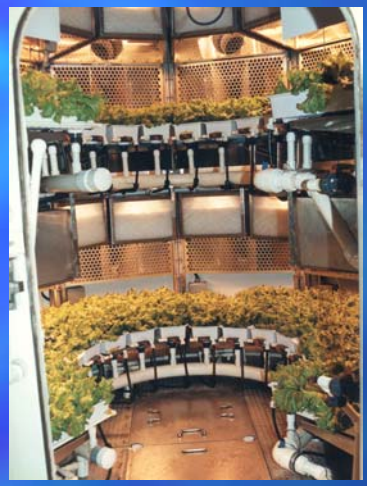
TAL Site Security

Spaceport & Range Technology

Range



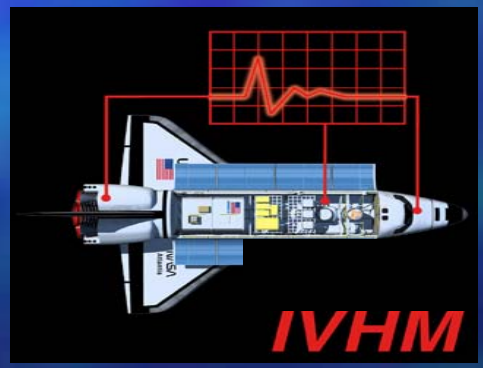
Biological Sciences



Process & Human Factors

Spaceport Structures and Materials

Fluid Systems



Command, Control & Monitoring

Testbeds

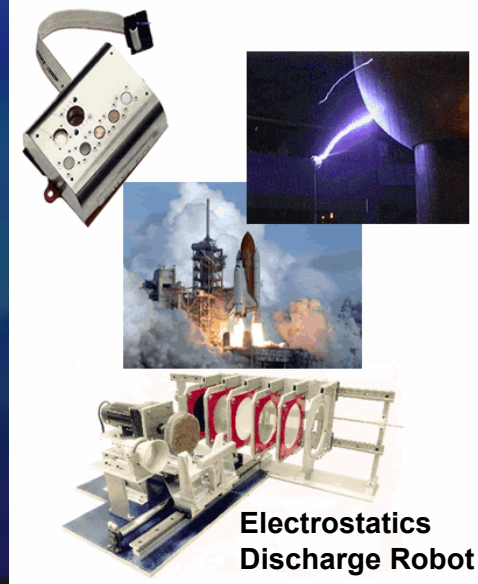
CRYOGENICS TESTBED

MATERIALS SCIENCE TECHNOLOGY

H2O Soluble Conductive Polymer with NASA partner: GeoTech Chemical Co.

Fire-Resistant High Performance Polyimide Foams

ELECTROSTATICS & MATERIALS PHYSICS TESTBED



Electrostatics Discharge Robot

LAUNCH SYSTEMS TESTBED

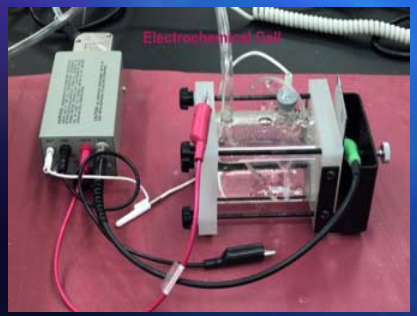
CORROSION TESTBED

Corrosion Technology Testbed

- ***MISSION***

  To develop corrosion control technologies and investigate, evaluate, and determine material behavior in various corrosive environments

- ***FACILITIES-CAPABILITIES***
  - **Accelerated corrosion equipment**
  - **Electrochemistry lab**
  - **Coatings application lab**
  - **Atmospheric exposure site**
  - **Seawater immersion system**

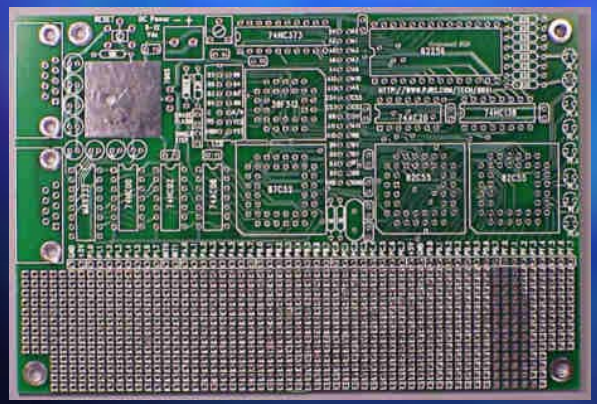


- ***RECENT FOCUS***
  - **Liquid applied coating for corrosion protection of rebar in concrete**
  - **Electrochemical and atmospheric studies of alloys for launch pads**
  - **Chloride rinse agents**
  - **Anti-foul coatings (SRB recovery ships)**
  - **Formulation of anticorrosive coatings**

Pollution Prevention Technologies

Portable Laser Coating Removal System

Low-VOC Paint Testing

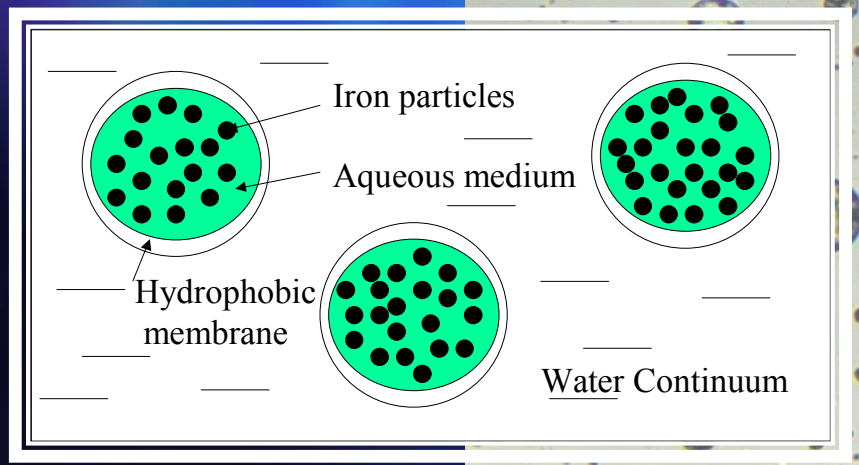


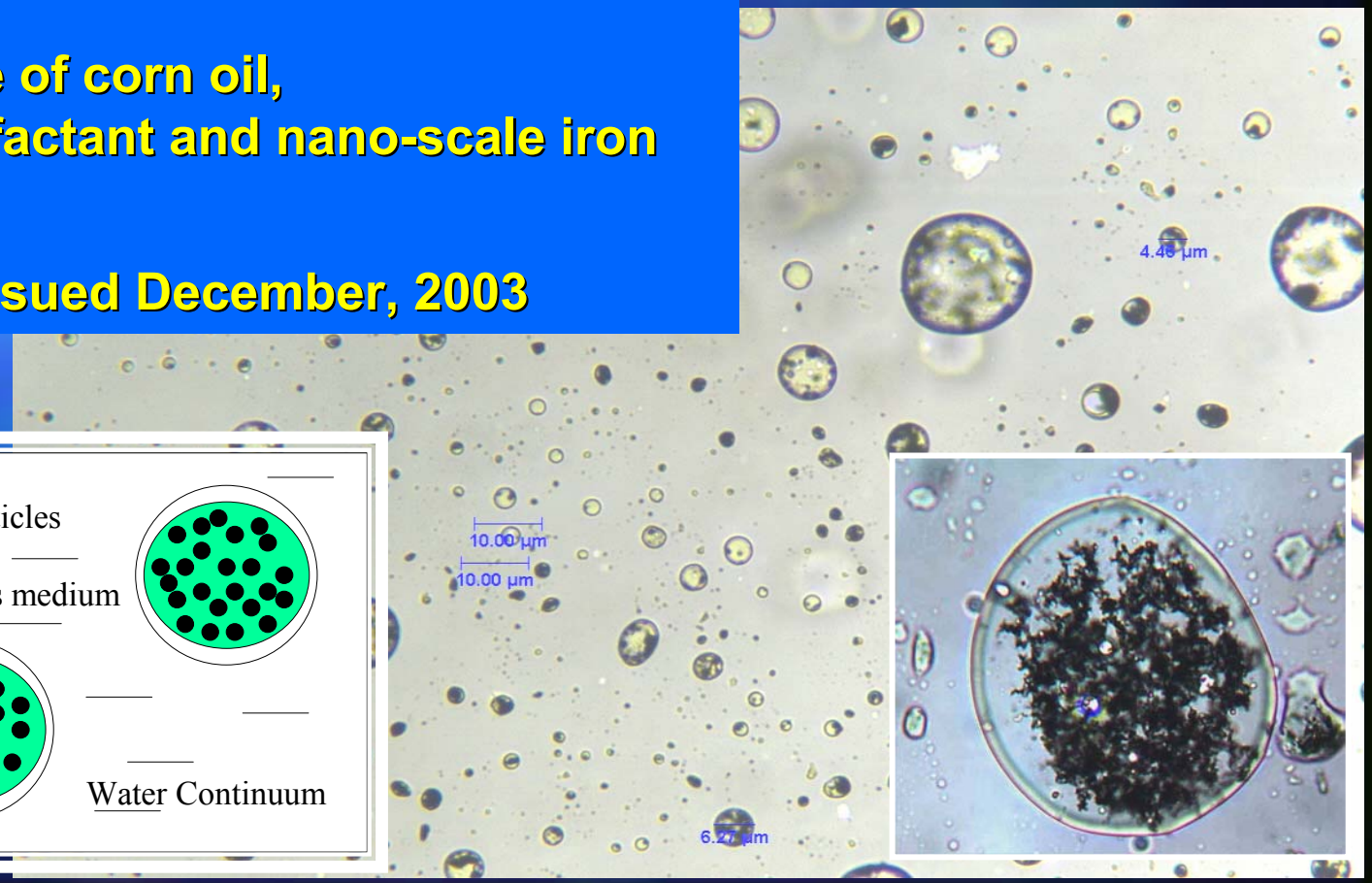
Lead-free Solder

Low Emission Depainting

Environmental Remediation

- ***Emulsified Zero-Valent Iron***
  - **Applied directly to aquifer to remove chlorinated contaminants**
  - **Emulsion made of corn oil, food-grade surfactant and nano-scale iron**
  - **NASA Patent Issued December, 2003**



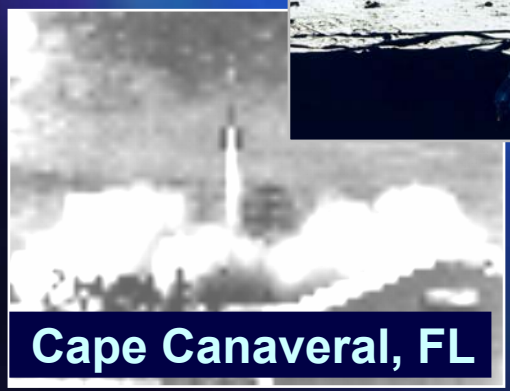


Expand Your Thinking

Imagine where we can be in the next 50 years!

Dec 17, 1903

100 years, Dec 17, 2003



July 24, 1950

July 20, 1969

Today

The Future

Space Station